CONSERVATION EASEMENTS AS TOOLS TO ACHIEVE REGULATORY ENVIRONMENTAL GOALS

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I
INTRODUCTION

The traditional approach to protecting public-trust resources, such as wildlife found on private lands, is predominantly regulatory and proscriptive. Environmental regulation—such as the Endangered Species Act, Clean Water Act, or Clean Air Act—has focused on restricting or prohibiting resource management by landowners. However, achieving the goals of legislation enacted to protect these resources often requires *proactive* landowner cooperation, such as active habitat restoration and maintenance. With litigious histories dogging much regulatory implementation, public agencies have tended to rely upon court-proven formulas to enforce protections across a variety of circumstances—even when more flexible approaches might better address individual instances. Further, regulatory tools such as permits have specific durations, but achieving protection of public-trust resources is not a time-limited endeavor. Rather, it is multigenerational, even perpetual, in nature. Finally, legislation to remedy environmental harm has been very symptom- and point-oriented, rather than addressing the root causes of undesired symptoms, which, with natural resources, are often ecosystem based.

These contrasting needs and tools often lead to a misalignment of regulatory goals and implementation. This is perhaps most pointed in the case of protecting public-trust resources damaged in the course of resource management, which affects entire habitats and ecosystems such as forests. The regulations focusing on preventing harm to specific aspects of those habitats and systems normally have a much narrower focus, for example, on an individual wildlife species such as the Northern Spotted Owl (*Strix occidentalis caurina*). In these cases, voluntary conservation easements on managed forests offer a complementary tool to regulation. These working-forest conservation

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easements (WFCEs) are incentive based, perpetual, tailored to specific properties, and guide resource management to favor public-trust resource protection. As a complementary tool to regulation, they foster restoration and permanent protection for listed-species habitats on private lands. As market-based mechanisms, conservation easements also have broader applicability for supporting payments for ecosystem services overall. When developed on working forestlands, such easements allow for both sustainable resource management and the protection of forest ecosystems.

WFCEs may also achieve certain goals of the Clean Air Act (CAA)[1] and state regulations, with specific relevance to mitigating biotic emissions of carbon dioxide, the primary "greenhouse" gas of anthropocentric origin. This article explores two case studies of WFCE utilization by the Pacific Forest Trust (PFT) to help achieve the goals of (1) the Endangered Species Act (ESA)[2] for protection of the Spotted Owl and (2) the CAA for mitigation of carbon-dioxide emissions, as well as their overarching applicability as payments for ecosystem services.

The first case study analyzes a WFCE held by PFT on the 7,200-acre van Eck redwood forest in California. This WFCE was used as the basis for a ninety-year Safe Harbor Agreement with the United States Fish and Wildlife Service (USFWS). The second case study addresses the mandatory use of conservation easements in the implementation of the voluntary California state program to mitigate global warming. The subsequent, voluntary use of easements in the state's regulatory climate program was driven by market preference for the higher quality of offsets secured by conservation easements.

II

BACKGROUND: ECOLOGICAL CHANGE IN THE UNITED STATES FORESTS POST-SETTLEMENT

When Europeans first migrated to what is now the United States over three hundred years ago, the country's forests looked vastly different. The average forest was composed largely of old growth or virgin forest, apparently undisturbed by human influence other than light fires.[3] Disturbances were fire (both "natural" and anthropogenic), weather-related (wind, freezes), and some pests. Catastrophic fires were rare; light fires were common. Overall, intense disturbances were relatively few and small in scale. These habitat-shaping forces led to a suite of species dependent on older, more-stable forests with relatively fewer and smaller-scale disturbances than the numerous, intense, and continental-level disturbances about to impact them.

Biodiversity in these forests evolved in, and was thus dependent on, environments with contiguous habitat and fewer disturbances. Habitats of

1. 42 U.S.C.A. §§ 7401–7671(q) (West 2003 & Supp. 2010).
2. 16 U.S.C.A. §§ 1531–1537, 1537(a), 1538–1544 (West 2010).
3. GORDON G. WHITNEY, FROM COASTAL WILDERNESS TO FRUITED PLAIN (1994).

undisturbed forests provided many niches and opportunities for specialization. These older, more-stable forests also sequestered (that is, absorbed and stored) vast amounts of carbon dioxide on both an annual basis and over time in large "carbon banks."[4] Older forests store more carbon than younger ones.[5] Prior to the arrival of Europeans in the Americas, few events—wide-scale catastrophic fires—caused the complete loss of these rich, old forests with the consequent decay and release of roughly one-third of the stored carbon dioxide. These forests contained some of the world's largest carbon reservoirs.[6] Globally, atmospheric concentrations of carbon dioxide were at roughly 280 ppm (parts per million), a level at which they had been relatively stable for several thousand years.[7]

Both the extent and composition of U.S. forests have changed dramatically in the past three hundred years due to development, conversion to agriculture, and multiple timber harvests. Forest area has been reduced by over thirty-three percent.[8] Many of the most productive lowland forests have been converted to agricultural land. The vast majority—over seventy-five percent—of U.S. forests today are under one hundred years of age, subject to regular intensive disturbances from industrial forest management.[9] About ten percent of U.S. forests are one hundred to two hundred years of age, and less than five percent are true, relatively undisturbed old growth (over two hundred years of age).[10] These latter age classes exist in national parks and wilderness areas. With the exception of relatively small areas in parks and wilderness, these forests have become significantly fragmented. In addition, fire regimes have been substantially altered, with catastrophic fire replacing frequent, low-intensity fires. Pests and disease are far more common, and exotic pests and diseases (many of which are invasive) have been transported in large numbers to this country.

There are two related outcomes of this upheaval in our forests: The first is the release of enormous pulses of carbon dioxide into the atmosphere, and the second is the collapse of many species.[11] The suite of species that evolved to live in the relatively stable and extensive forests of 250 years ago is highly challenged to live in these new conditions. Further, due to both the overall levels of emissions and the cycling time of carbon, the net concentrations of

4. Sebastian Luyssaert et al., Letter, *Old-Growth Forests as Global Carbon Sinks*, 455 NATURE 213, 213 (2008).

5. *Id.*

6. *Id.* at 215.

7. RAJENDRA K. PACHAURI & ANDY REISINGER, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT 37 (2007).

8. W. BRAD SMITH ET AL., FOREST SERV., U.S. DEP'T OF AGRIC., GTR-NC-241, FOREST RESOURCES OF THE UNITED STATES, 2002, at 1 (2004).

9. *See id.*

10. *Id.* at 60–63.

11. *See generally* Henrik Hartmann, *Will a 385 Million Year-Struggle for Light Become a Struggle for Water and for Carbon?—How Trees May Cope with More Frequent Climate Change-Type Drought Events*, 17 GLOBAL CHANGE BIOLOGY 642 (2011).

atmospheric carbon dioxide have significantly increased to over 370 ppm today.[12] Scientists fear this level could be a "tipping point" leading to major instabilities in the global climate.[13]

Two unrelated federal regulatory laws, the ESA and the CAA, and one state law, California's Global Warming Solutions Act,[14] are responses to the consequences of forest loss, fragmentation, and depletion. These laws do not address, however, the root causes of these outcomes. Further, both federal and state laws rely largely on two tools: (1) setting the threshold limits of behavior by which one can continue to operate and (2) establishing the punitive consequences of not meeting those threshold standards. Neither the federal nor state regulatory approaches embody significant tools to remedy the harm of past actions that drove the regulatory requirements in the first place, nor do they establish rewards for excellence.

WFCEs have utility in directly addressing the precipitating causes of species extinction and major releases of carbon-dioxide emissions. They prevent forest loss overall and reduce fragmentation and depletion by providing direct financial compensation to compete with the financial drivers of these causes. Further, through compensation, WFCEs can foster the restoration of conditions in older, more-natural forests that provide desired habitat and store more carbon. In these ways, conservation easements provide a complementary tool to regulation.

III

THE EMERGENCE OF THE REGULATORY ENVIRONMENTAL PROTECTION ACTS

While there is a history of public lament for the change in our natural environments, from Thoreau to Muir to Carson, the public responded most strongly in the 1960s and 1970s with the advent of the historic era of environmental regulation to protect public-trust resources of clean water, clean air, and wildlife. Following the landmark passage of the National Environmental Policy Act of 1969,[15] came the ESA in 1973, the Clean Water Act of 1972,[16] and major modifications to the initial CAA in 1963,[17] and its subsequent amendments in 1970,[18] 1977,[19] and 1990.[20] The public wanted strong

12. PACHAURI & REISINGER, *supra* note 7.

13. James Hansen et al., *Target Atmospheric CO2: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217, 225–26 (2008); Harold Mooney et al., *Biodiversity, Climate Change, and Ecosystem Services*, 1 CURRENT OPINION ENVTL. SUSTAINABILITY 46 (2009).

14. 2006 Cal. Legis. Serv. ch. 488 (West) (codified at CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West Supp. 2010)).

15. Pub. L. No. 01-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4331–4335, 4341–4346, 4346a, 4346b, 4347 (2006)).

16. Pub. L. No. 95-217, 91 Stat. 1566 (1977) (codified as amended at 33 U.S.C. §§ 1281a, 1294–1297 (2006)).

17. Pub. L. No. 88-206, 77 Stat. 392 (1963) (codified as amended in scattered sections of 42 U.S.C.).

18. Pub. L. No. 91-604, §§ 2–11a, 12–15(a), (c), 84 Stat. 1676–1713 (1970) (codified as amended in

protections against the sometimes flagrant pollution and destruction of public resources in the course of corporations and landowners "doing business"—that is, using methods that produce the greatest short-term return, but then often foisting the costs of environmental harm onto future generations, future landowners, or the public generally. Accordingly, the laws took a "command and control" approach to regulation. Many in the regulated community characterize these laws as a "blunt hammer" approach. They have nonetheless been effective in addressing the most egregious practices and changing the way business is done to better protect public-trust resources and human health.

More recently, because public awareness about the risks of global warming has grown, there have been significant efforts at both the state and federal level to again develop such landmark legislation to address global warming. While federal legislation is currently stalled, there is action at both the state and global level to mitigate global warming. California is currently the only state in the United States to have comprehensive, economy-wide climate legislation: The Global Warming Solutions Act.[21] However, ten states participate in the Regional Greenhouse Gas Initiative in the Northeast;[22] seven states and four Canadian provinces participate in the Western Climate Initiative,[23] and there is a Midwestern Greenhouse Gas Reduction Accord as well.[24] In addition, several other states have passed their own "Global Warming Solutions Acts," including Massachusetts and Maryland.[25]

A. Shortcomings of Command and Control

These regulatory acts have served to stave off the imminent demise of many species, and effectuated the elimination or substantial remediation of many sources of air and water pollution. As such, these laws have produced many of their desired outcomes. However, while they have been largely effective in the *prevention* of undesirable actions, they have not served to achieve other outcomes that are dependent on the *promotion* of desired actions. The ESA, for

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scattered sections of 42 U.S.C.).

19. Pub. L. No. 95-95, tit. I–IV, 91 Stat. 685–796 (1977) (codified as amended in scattered sections of 42 U.S.C.).

20. Pub. L. No. 101-549, 104 Stat. 2399 (1990) (codified as amended at 42 U.S.C.A. §§ 7401–7671q (West 2003 & Supp. 2010).

21. CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West Supp. 2010).

22. *RGGI, Inc.*, REGIONAL GREENHOUSE GAS INITIATIVE, http://www.rggi.org/rggi (last visited Feb. 22, 2011).

23. *WCI Provincial and State Partner Contacts*, WESTERN CLIMATE INITIATIVE, http://www.westernclimateinitiative.org/wci-partners (last visited Feb. 22, 2011).

24. Ken Paulman, *Midwest Cap and Trade: Not Dead, Just Sleeping*, MIDWEST ENERGY NEWS (Mar. 4, 2011), http://www.midwestenergynews.com/2011/03/04/midwest-cap-and-trade-is-it-dead-or-no/.

25. *See, e.g.*, Climate Protection and Clean Economy Act, MASS. GEN. LAWS, ch. 21N §§ 1–9 (2008); Greenhouse Gas Emissions Reduction Act of 2009, MD. CODE ANN. ENVIR. §§ 2-1201 to 2-1211 (West 2009). These statutes do not encompass the entire economy of each state, however, differentiating them from the California Global Warming Solutions Act, which mandates an economy-wide emissions cap.

example has prevented the extermination of the San Francisco Bay Checkerspot Butterfly (*Euphydryas editha bayensis*), but has effectuated very little habitat restoration on private lands where they throve.[26] In some instances, the ESA has even incentivized the actual destruction of potential habitat: In the South, fear of ESA land-use restrictions has lead to the preemptive destruction of Red-Cockaded Woodpecker (*Picoides borealis*) habitat on private lands.[27]

This situation is unfortunately repeated across many species because the ESA lacks the tools to incentivize the proactive restoration of habitat for suites of species on anywhere near the scale needed. Similarly, while the CAA has the tools to largely prevent the current emission of pollutants, it does not have the provisions to deal with the legacy of historic pollution on the scale necessary. As with toxic chemicals in landfills, the excess carbon dioxide in our atmosphere will require active removal in order to achieve levels that are considered "safe," that is, below 350 ppm.[28] This issue will become even more pointed, as the CAA is now being invoked to deal with both accumulated excess biotic emissions of carbon dioxide as well as anthropocentric carbon-dioxide emissions, including most notably the consumption of fossil fuels over the past several hundred years.

B. Additional Tools: Conservation Easement Incentives

These regulatory acts were, and are, essentially powerful hammers that could be used as threats to curb certain behaviors. However, they were not designed to engage the private-landowner collaboration so essential to achieving proactive restoration on the scale needed for species or natural systems to thrive. These federal acts lose much of their impact when employed to deal with issues governing resource management and development on private lands. For example, real-estate development and forestry are primarily the purview of state (and sometimes local) agency regulation and control. With roughly sixty percent of forests privately owned, this poses a significant deficiency in the ability of federal regulators to respond to environmental problems stemming from private-land management.[29]

A further complication can occur when species that are protected under the ESA find and then use desirable habitats that result from a landowner's beneficial-management practices. The landowner's management is then subject to approval under the ESA, when, in the absence of these species, it had not been. This can cause significant expenditure of both money and time to ensure compliance with the ESA, even though the actions undertaken have been

26. Ellen McGarrahan, *Much-Studied Butterfly Winks out on Stanford Preserve*, 275 SCIENCE 479 (1997).

27. Dean Lueck & Jeffrey A. Michael, *Preemptive Habitat Destruction Under the Endangered Species Act*, 46 J.L. & ECON. 27 (2003).

28. Hansen et al., *supra* note 13, at 217.

29. FOREST SERV., U.S. DEP'T OF AGRIC., FS-874, INTERIM UPDATE OF THE 2000 RENEWABLE RESOURCES PLANNING ACT ASSESSMENT 20 (2007).

beneficial. This perverse outcome has sometimes been dubbed the "let no good deed go unpunished" provision. While the ESA has been modified to allow for Safe Harbor provisions to protect landowners from liability under these circumstances,[30] it nonetheless imposes significant scrutiny and substantial expenses on landowners in the effort to ensure that no harm comes to these listed species.[31]

By focusing on land stewardship and utilizing the powerful incentive of conservation easements, private voluntary land trusts—which focus on land stewardship and utilizing the powerful incentive of conservation easements—have the potential to be highly significant in accomplishing the desired goals of federal regulatory acts, above and beyond the observance of their proscriptive requirements. The flexible structure, incentive character, and permanent nature of conservation easements present a solid complement to the more inflexible, limit-oriented, and time-limited nature of regulatory tools.

IV

CASE STUDIES IN FOREST RESTORATION AND CONSERVATION

PFT works with willing landowners, from families to corporations (for example, members of Timber Investment Management Organizations), to develop permanent, qualified conservation easements on managed forestland. These forests are held and managed for economic return as well as, in some cases, recreational and legacy purposes. The easements provide financial incentives to landowners to hold their forests longer, leave more structure after harvest, and provide for a more-complex native forest. The economic value of leaving more trees on the land for longer periods of time is appraised, and this value is returned to landowners either directly in the purchase of the conservation easement, through tax benefits, or a combination thereof.[32] The overall impact of these WFCEs is to make natural and environmentally beneficial management more competitive economically with short-term, intensive forestry. The easements effectively pay for the trees left in the forest to grow longer or not be harvested at all, such as in additional stream or wetland buffers. The payments make up the difference in value that more intensive forestry removes from the landscape. Hence, these easements directly address and remove a key barrier—the time value of money—for landowners to manage the kinds of forests that both provide for threatened and endangered species and store more carbon, providing for real public benefit.[33] Table 1

30. David S. Wilcove & Joon Lee, *Using Economic and Regulatory Incentives to Restore Endangered Species: Lessons Learned from Three New Programs*, 18 CONSERVATION BIOLOGY 639, 640 (2004). For an explanation of habitat conservation planning, see Michael J. Bean & David S. Wilcove, Editorial, *The Private-Land Problem*, 11 CONSERVATION BIOLOGY 1 (1997).

31. *See generally* Robert Innes et al., *Takings, Compensation and Endangered Species Protection on Private Lands*, J. ECON. PERSP., Summer 1998, at 35.

32. *See generally* John L. Hollingshead, *Conservation Easements: A Flexible Tool for Land Preservation*, 3 ENVTL. LAW. 319 (1996).

33. Laurie Wayburn, *The Van Eck Forest*, *in* CONSERVATION CAPITAL IN THE AMERICAS 177, 183

illustrates how WFCEs provide complementary benefits to other regulatory approaches, expanding the net benefit for species as well as agencies and landowners.

(James N. Levitt ed., 2010).

Table 1: Endangered-Species Conservation Incentives:
Decision Support Matrix: Overview of Desired Outcomes and Potential Tools to Achieve Them

Outcomes	Tool: WFCE only	Tool: HCP only	Tool: WFCE & SHA	Tool: WFCE & Sect. 7
Broad resource protection	High: targeted to habitat/eco-system	Low: targeted to specified species	High	High
Prevents property fragmentation	Yes	No	Yes	Yes
Incidental-take authorization	No	Yes	Yes	Yes
Timeframe	+/- 1 year	Min. 2 years	Min. 1 year	+/- 1 year
Durability of IT authorization	N/A	Negotiable, based on terms	Long term, based on CE	Long term, based on CE management
"No surprises" assurance	N/A	Yes*	Yes*	No
Public comment	No	Yes	Yes	No
NEPA review	No	Yes	Yes	Yes
Breadth of species coverage	N/A	Broad: listed and unlisted possible	Broad: listed and unlisted possible	Limited: listed species only
Cost for Agency	N/A	High	Medium	Low
Cost for Landowner	Low	High	Medium	Low
Mitigation requirement	N/A	Yes	No: net conservation benefit	No: only minimize
Compensation to Landowner	Yes	Not for required mitigations	Yes	Yes

* "No Surprises" Rule available for HCP or SHA for covered species.
HCP stands for Habitat Conservation Plan.
SHA stands for Safe Harbor Agreement.

A. Case Study #1: The ESA

Working with a number of landowners to help manage their forests for restoration of older, more-natural conditions, PFT wanted to ensure that these landowners were not caught in the perverse "let no good deed go unpunished" situation. State and federal regulatory authorities have obligations via the federal ESA[34]—and in many instances, state-level endangered-species acts, such as in California and New York—to prevent harm to listed species on private lands. Because the listed species were likely to return to these landowners' conserved properties, PFT realized that agencies would become more involved in the management of these lands in the near future. For example, once owls are present, the regulating agency has the capacity to halt timber harvest until they are satisfied that no harm to the listed species will occur. This can be financially harmful to landowners.

PFT was specifically concerned with the habitat of the Northern Spotted Owl (*Strix occidentalis caurina*), a species causing much controversy in the 1990s throughout the Pacific Northwest. These birds are highly dependent on old forests with significant tree canopy that provide cover from predators and large dead trees that serve as habitat for its prey. These were precisely the kinds of forest conditions a number of PFT landowners were restoring and maintaining.

PFT's conservation easements already restricted management of the forests substantially compared to what was allowable by law. The typical restrictions required by the ESA habitat conservation plans could pose significant hardships for these landowners.[35] PFT felt that there should be some opportunity to use the benefits of the conservation easement for the wildlife it supported, and specifically in meeting the requirements of the ESA for Spotted Owls. Hence, PFT initiated conversations with the USFWS on this opportunity conceptually in the late 1990s. Although the USFWS was sympathetic and was open to the notion, no owls had as yet returned to any of the lands protected by PFT conservation easements. Therefore, there was not an actual case to present.

Then, from 2000 through 2001, PFT worked with Fred van Eck, and subsequently his trust, to establish conservation easements on 9,400 acres of managed forests that he owned in California and Oregon.[36] Mr. van Eck had multiple purposes for this ownership, but the primary one was economic. The forests were part of a diversified portfolio of investments. Mr. van Eck felt that forests, when well-managed, would provide consistent, long-term returns that increased over time and served as a hedge against inflation and short-term market variability, a belief shared by many investors.[37] He also recognized that

34. 16 U.S.C. § 1538 (2006).

35. *See* Bean & Wilcove, *supra* note 30.

36. Personal communications between Laurie Wayburn and Fred van Eck (2000); personal communications between Laurie Wayburn and J. Graham (2001–02).

37. Katherine Burton & Matthew Keenan, *Investors Are Turning Timberland into Gold*, MARKETPLACE by Bloomberg, INT'L HERALD TRIB., Apr. 6, 2006, at 23.

older forests produced a larger volume of harvestable wood, and higher-quality wood products, than younger forests produced. An avid birder, Mr. van Eck also wanted his forests managed consonant with his conservation interests, especially for biodiversity. His forest management embodied these goals, and he wanted this perpetuated. Although Mr. van Eck died before he could effectuate his wishes, his estate completed conservation easements on his working forests.

Reflecting Mr. van Eck's belief that economic and ecologic returns could be synergistically maximized, these twin aspects were embodied in the conversation easement, both in its overarching Performance Goal[38] and in the specific terms. Notably, the Performance Goal, as follows, sets very specific requirements for the structure and composition of the forest, describing the complex habitat to be managed for and achieved over time in the canopy, mid- and shrub layers of the forest.

1. Management Performance Goal

> Consistent with the purposes of this easement, it is the intent of forest management undertaken by Grantor to restore and maintain through time the late seral to mature, complex native coastal redwood ecosystem. This forest exhibits a high degree of spatial and temporal scale heterogeneity in habitat structure and species composition, with variation exhibited through time, from stand to stand and from acre to acre, and is generally characterized by the following:
>
> a. A mix of dominant tree species including redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), western hemlock (*Tsuga heterophylla*), and Sitka spruce (*Picea sitchensis*), and, to a lesser extent, western red cedar (*Thuja plicata*), with associated species including tanoak (*Lithocarpus densiflora*), red alder (*Alnus rubra*), big leaf maple (*Acer macrophyllum*), and vine maple (*Acer circinatum*). Redwood comprises over 75% over the conifer component, with other conifers comprising the remainder, although at times, Sitka spruce may rise to 25%. As these forests increase in age, composition is expected to shift to an increase of redwood, western red cedar and Douglas fir, with a corresponding decline in representation of grand fir, Sitka spruce and hemlock. The stocking target for these forests is a minimum of 100,000 board foot per acre. The tree understory is typically dominated by redwood and hemlock. Canopy in the overstory may attain 100% representation of redwood. Shrub and herb layers vary according to local site conditions, particularly moisture regime; at the drier end of the spectrum, the shrub layer is densely dominated by salal (*Gaultheria shallon*), ocean spray (*Holodiscus discolor*), and Oregon grape (*Berberis nervosa*), and the herb layer is very sparse. At the wetter end, the shrub layer is dominated by salmon berry (*Rubus spectabilis*). On moderately wet sites, sword fern (*Polystichum munitum*) and red huckleberry (*Vaccinium parvifolium*) make up most of the herb and shrub layers.
>
> Riparian areas are dominated by the same species that occur in the contiguous forest, though with a greater representation of red alder, at up to 30%, and big leaf maple at 15%, of total composition;
>
> b. A multi-story canopy of variable densities but generally with no less than 80% closure, allowing for gaps occurring due to natural disturbances, mortality and timber harvesting;

38. Deed of Conservation Easement by the Fred M. Van Eck Forest Trust and the Pacific Forest Trust, Inc. (on file with author) [hereinafter Van Eck Conservation Easement].

> c. A range of age classes, from 1 to over 600 years, to be achieved over time and occurring heterogeneously across the property, with 25% of the inventory in the over 200 year classes; 50% of the inventory in the 80–200 year classes, and 25% in the 1–80 year classes;
>
> d. An average of 15 dominant conifers 36" diameter at breast height (dbh) or greater per acre, distributed throughout the forest area in a heterogeneous pattern with at least 6 of these conifers exceeding 48" dbh; and
>
> e. Sufficient volumes of standing dead trees, down logs and large woody debris on the forest floor as is commonly found in late seral redwood forests. This will typically be at least four standing snags per acre of at least 30" dbh, with an average of 1,600 cubic feet of down and rotten logs per acre, all averaged out over any ten acres.
>
> f. These late seral to mature forest characteristics are more particularly described in Appendix A of the Report.[39]

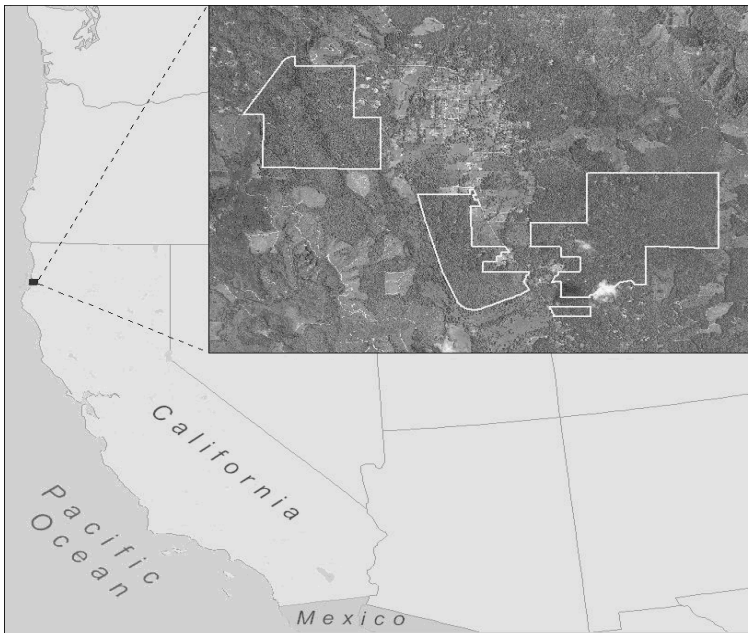
2. Habitat Impact for Listed Species

Key to these conservation easements was the requirement that management restore later seral stages and develop a forest structure that resembled the natural condition of the redwood forests. Not only would this restore and maintain a far greater volume of harvestable, high-quality timber over time, it would also provide critical habitat for a number of species of concern in the region, and most specifically for the Northern Spotted Owl. This later seral-stage habitat is largely lacking on private lands, and, despite Redwood National Park and several state parks, private ownership dominates the redwood region.[40]

39. *Id*.

40. *See* CAL. DEP'T OF FORESTRY AND FIRE PROT., CALIFORNIA'S FORESTS AND RANGELANDS: 2010 ASSESSMENT (2010), http://frap.fire.ca.gov/assessment2010.html.

Figure 1: Aerial photograph of the four tracts composing the van Eck forests (PFT)



The van Eck forests have become an island of relatively natural, older forests in a sea of younger, industrially managed lands and growing development. The van Eck forests, with their closed canopy of larger trees, now present a haven for Spotted Owls. Indeed, they are being managed for this outcome with a requirement of eighty-percent canopy cover to be developed and maintained over time.[41] By 2006, a Spotted Owl responded to survey calls on the van Eck.[42] While it was a single bird, with no evidence of any mate or nesting activity, it signaled that the management was successful in its "build it and they will come" approach. This was the beginning of what would become an "activity center" in the language of the USFWS,[43] meaning that ESA requirements would need to be addressed shortly.

In protecting Spotted Owls on private lands, the standard approach of the USFWS is primarily designed to modify intensive, industrial management. This approach reserves the forest area where an owl is present from all harvest, and establishes significant "buffer areas" of suitable habitat. These "no cut" provisions endure as long as an owl is present, and then for three years after the nest is abandoned—in case a bird returns or other birds occupy this area. These

41. Van Eck Conservation Easement.

42. Van Eck Conservation Easement.

43. U.S. FISH & WILDLIFE SERV., PROTOCOL FOR SURVEYING PROPOSED MANAGEMENT ACTIVITIES THAT MAY IMPACT NORTHERN SPOTTED OWLS (2011).

provisions include an eighteen-acre no-cut buffer around any existing activity center (an "owl circle"), plus any prior activity center for three years post-occupation; they also include maintaining nesting habitat for another eighteen acres,[44] and then maintaining suitable habitat for owls in two layers for another 1,336 acres.[45] These provisions are designed to prevent "take" or "harm" to the species and to provide an undisturbed area for the nesting pair. Effectively, they also remove and diminish harvest on up to thousands of acres. They are not designed to promote active management or restore nesting, fledging, and foraging habitat of the species; rather, they are designed to constrain and modify typical clear-cut forestry.

For the van Eck forests, however, with significant portions already removed from harvest activity via the easement provisions, and, more importantly, with easement provisions mandating management to specifically restore desired conditions, such an approach would be cost prohibitive. It was also unnecessary.

Of all the requirements for Spotted Owl protection, the most important are the maintenance of canopy cover and the reduction of disturbance at the nest site.[46] The no-cut restrictions are designed to provide for consistent canopy cover near the nest site of the owls, protecting them from predation when they go in and out of the nest.[47] This is especially relevant to the Barred Owl (*Strix varia*), which is notorious for its ability to kill Spotted Owls when they emerge from cover into the many large clearings created by intensive harvest. The van Eck easement already required development and maintenance of eighty-percent canopy cover across the entire ownership.

The USFWS biologists and management knew generally about conservation easements—primarily for their role in permanently protecting land from subdivision or development. They recognized this as a major benefit and one that neither the ESA's habitat conservation plans nor Safe Harbor Agreements accomplished. They also recognized the value of having perpetual conservation easements attached to the deeds for specific properties, rather than having agreements that can be abandoned. They were not familiar, however, with an easement's use in guiding or restricting forest management. As such, the USFWS biologists and management had an initial desire to use many of their standard ESA restrictions. This would have imposed a prohibitive and unnecessary overlay to the conservation easement.

After much discussion concerning the key provisions of the easement in the Performance Goal, which required both the restoration and maintenance of the preferred habitat for Spotted Owls, the USFWS and the State of California

44. *See, e.g.*, DRAFT HEADWATERS HABITAT CONSERVATION PLAN/SUSTAINABLE YIELD PLAN: NORTHERN SPOTTED OWL CONSERVATION PLAN 20 (1998), *available at* http://resources.ca.gov/headwaters/hcp/v4/v4pc.pdf.

45. CAL. CODE REGS., tit. 14, § 919.9 (2011).

46. *See* U.S. FISH & WILDLIFE SERV., 2010 DRAFT REVISED RECOVERY PLAN FOR THE NORTHERN SPOTTED OWL (*STRIX OCCIDENTALIS CAURINA*) (2010).

47. CAL. CODE REGS., tit. 14, § 919.9 (2011).

agreed that the easement provided the essential basis for a ninety-year Safe Harbor Agreement,[48] the longest agreement available. The conservation easement was incorporated by reference and was included as an appendix to the agreement. While everyday operations remained largely unchanged, three specific limitations were added to those of the conservation easement: (1) a prohibition on the harvest of any actual nest tree; (2) the delineation of 6.5-acre, no-cut buffer at an existing activity center and one potential future center; and (3) a two-acre, no-cut buffer on any additional sites.

The USFWS determined that the conservation easement would be an effective basis for granting incidental-take permission—where harm occurs inadvertently to the species in the course of undertaking management, which is allowed under the permit. Additional factors that were taken into account in this determination were the specific harvest restrictions, which are the side bars for the Performance Goal,[49] and PFT's standard enforcement provisions. The key harvest-restriction provisions are as follows:

> Specific Restrictions on Commercial Timber Harvest:
>
> a. Waterbody, Watercourse and Riparian Forest Management Zones (WRMZs): A 200-foot slope distance WRMZ buffer zone shall be maintained along each side of all year-round fish-bearing streams, measured from the annual high water mark; and a 100-foot slope distance WRMZ buffer zone shall be maintained along each side of intermittent streams with flows that support aquatic life, measured from the annual high water mark; trees may be cut in these zones pursuant to a riparian habitat restoration and maintenance plan approved by Grantee.
>
> b. Opening size and extent: Forest openings created through timber harvest shall not exceed one-half (.5) acres in size for each opening, except for restoration purposes where non-native species or species composition occur. In such cases, openings shall not exceed 2.5 acres. In a ten year period, openings so created shall not comprise more than 10% of the forest area of the Property in aggregate.
>
> c. Minimum leave stand: After any timber harvest, the leave stand for that harvest unit shall contain a distribution of native tree species consistent with the site and the Performance Goal of this Easement, with a preponderance of such leave trees to be windfirm, with full crown and able to promote regeneration of trees with high quality genetic characteristics; provided, however, that an appropriate portion of dead and dying trees shall be left so as to be distributed around the Property for habitat.
>
> d. Maximum harvest volumes: Timber harvests may not remove more than 15% per decade of net merchantable forest inventory as measured in Scribner short log board foot volume or similar system per decade, or 50% of growth, whichever is greater. After stocking achieves an average of 70,000 board foot/acre, harvest may not remove more that 15% of inventory per decade. Merchantable forest inventory shall be defined to include trees greater than or equal to ten inches (10") dbh and shall utilize a standard methodology acceptable to Grantee that provides a confidence level of ninety percent (90%) or better for the sample. A reinventory shall occur every ten (10) years, unless Grantor and Grantee mutually agree that such reinventory is unnecessary for a specific decade.

48. Matt Baun, *Arcata FWO: Landmark Van Eck Forest Safe Harbor Agreement to Benefit Northern Spotted Owls*, Journal Entry to *Fish & Wildlife Journal*, U.S. FISH & WILDLIFE SERV. (May 12, 2009), http://www.fws.gov/arsnew/print/print_report.cfm?arskey=26073.

49. Van Eck Conservation Easement.

> e. Steep slopes and high erosion areas: Timber harvests are prohibited in areas of severe erosion potential.
>
> f. Set asides: No timber harvesting shall occur within certain sensitive habitat areas as shall be mutually agreed with Grantor, and then identified in the Report. These areas shall be initially inventoried and designated within five years of the date of this easement, with periodic review over time.
>
> g. Catastrophe: In the event of catastrophic wildfire, windstorm, insect infestation, or other natural catastrophe, Grantor may exceed these harvest levels, with the prior approval of Grantee, provided that such proposed harvest is shown to be consistent with the Performance Goal above and the purposes, terms and conditions of this Easement. After a timber harvest predicated on a catastrophic event, Grantor shall reforest with native species as necessary during the planting season following harvest. The forest inventory and the forest management plan shall be updated accordingly.[50]

The USFWS also recognized that there was adequate and sufficient financial guarantee that PFT would be able to enforce and steward the easement over time. Hence, management on the forests, which annually removes over one-million board feet of timber, and expects this to double in the next forty years, has been able to continue as planned. This provides operational certainty for the landowner.

The net beneficial result of this agreement is many fold over that of adopting the typical approach for gaining incidental-take permission. The species gained permanent protection from the conservation easement. In PFT, the USFWS now has an enforcement partner who is in regular contact with the landowner—something USFWS personnel are hard pressed to accomplish. The landowner received recognition for the stewardship they were providing and faced reduced requirements compared with typical incidental-take permissions. The easement confers financial value for its restrictions, as opposed to standard ESA tools, which do not. Finally, in the USFWS, PFT gained a partner in ensuring effective enforcement of easement forest-management provisions, providing additional resources if ever these may be needed.

B. Case Study #2: Climate Benefits of Working-Forest Conservation Easements; The California Global Warming Solutions Act and Clean Air Act

In addition to their habitat and listed-species benefits, older, more-natural, and more-complex forests have significant climate benefits; they sequester more carbon dioxide than younger forests.[51] These older, more natural forest systems are also more resistant and resilient to a variety of natural disturbances, such as fire, that can result in substantial carbon emissions. The loss of virgin and older second-growth forests has been, and remains, the second-largest source of human-caused carbon-dioxide emissions, responsible for a third of all

50. *Id.*

51. Luyssaert et al., *supra* note 4.

anthropogenic emissions since 1850.[52] Unlike other sources of carbon emissions, forests have the ability to reabsorb the carbon emitted from them as they grow. Thus, the conservation, management, and restoration of older forests is a potent tool for mitigating global warming.

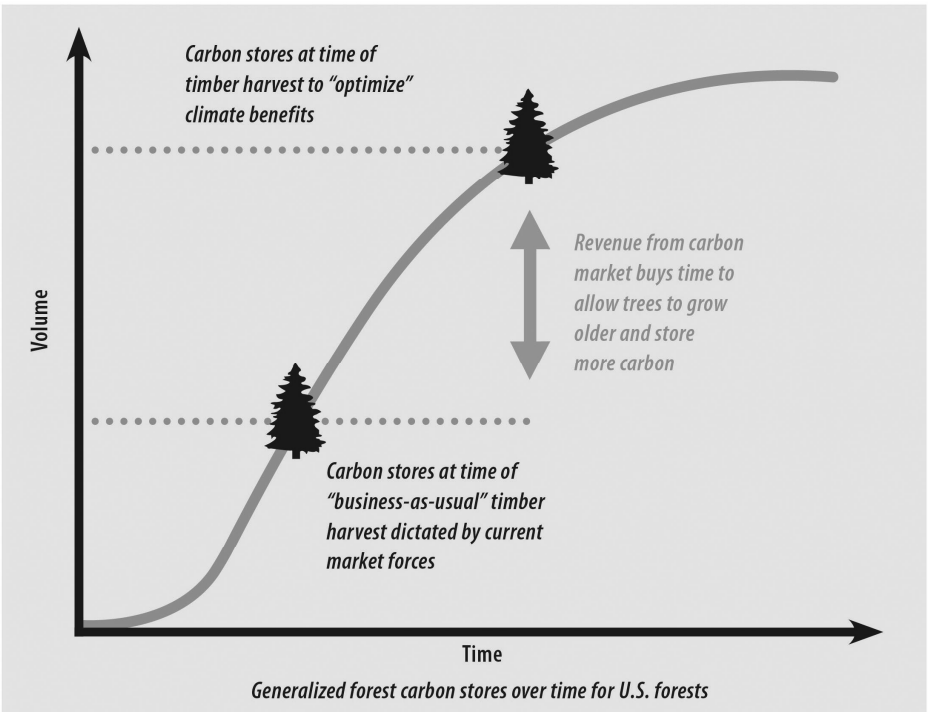
As California began developing its first voluntary efforts to combat global warming in 2000,[53] PFT wanted to ensure that the role of forests in that effort was properly recognized and incentivized. This recognition occurred through legislation signed in 2002.[54] The bill included not only the integration of forests into the state's voluntary program to address global warming, it also required the development of rules, or protocols, for carbon-emissions-reduction projects implemented with forests. Three types of emissions-reductions projects were recognized: (1) managing California forests for greater net carbon stocks than that required by law and feasible in practice, (2) restoring forests on historic forest soils, and (3) avoiding the loss or conversion of forests to a non-forest condition (that is, agriculture or development). The bill further required that such projects be secured with qualifying conservation easements and utilize natural-forest management—management that promotes and maintains forest types found naturally in California. This was to ensure that the forests, and by extension their climate benefits, were to be permanently protected, were more likely to adapt to climate change than non-native forests, and that no conversion of natural forests to exotic, non-native forests would be perversely promoted.

52. Jeanine M. Rhemtulla et al., *Historical Forest Baselines Reveal Potential for Continued Carbon Sequestration*, 106 PROC. NAT'L ACAD. SCI. 6082, 6082 (2009).

53. Act effective Sept. 30, 2000, 2000 Cal. Legis. Serv. ch. 1018 (West) (repealed 2006).

54. Act effective Sept. 9, 2002, 2002 Cal. Legis. Serv. ch. 423 (West) (repealed 2006).

Figure 2: Generalized Forest Carbon Stores over Time



The use of conservation easements was a requirement of the first climate legislation. Their use conveyed to the public a sense of quality, as well as real risk reduction and permanence to the projects. It was also a major incentive for conservation, and recognized that the root cause of forest loss and depletion was the greater economic return derived from conversion for development, as well as the short-term return from frequent, intensive harvests. The legislation was designed to specifically embody incentives to encourage landowners to undertake conservation easements with their inherent financial benefits, and then qualify for additional economic return from sales of carbon-emissions reductions.

This did occur with a number of landmark sales of such emissions reductions or carbon-reduction tons (CRTs). The first major commercial transactions of domestic, forest-based carbon-emission reductions were from the van Eck forests in 2008.[55] This was followed rapidly by many other projects.[56] Over forty projects across the country were developed under this program.[57] While other carbon-emissions projects were developed under other voluntary systems,[58]

55. CLIMATE ACTION RESERVE, http://www.climateactionreserve.org/how/projects/ (last visited Jan. 5, 2011).

56. *Id.*

57. *Id.*

58. *See, e.g.*, CHICAGO CLIMATE EXCHANGE, http://www.chicagoclimatex.com/ (last visited Mar.

CRTs developed under the California program commanded a substantial premium, delivering between ten and one hundred times the price of other CRTs.[59] Buyers, both direct-end users and emissions traders, responded well to the quality of the California CRTs—specifically to the permanence, risk reduction, and overall assurance conveyed by the conservation easements.[60]

The provision requiring conservation easements in this voluntary program sunset, however, after five years. The voluntary program was then replaced by California's Global Warming Solutions Act of 2006,[61] which called for the nation's first economy-wide comprehensive legislation regulating global-warming gas emissions, especially carbon dioxide. This program did not have a specific requirement for conservation easements. The two most significant reasons were (1) that the costs of requiring a conservation easement on all projects would inherently limit the number of projects because funding for easements is limited and (2) that conservation easements are not suitable for all landowners who might want to undertake meaningful carbon-emissions reduction projects.

Another complicating factor was that the Act was being implemented by the California Air Resources Board,[62] which does not have explicit authority to regulate forest management, but rather air quality.[63] This is a factor that also plays into the application of the CAA to regulate carbon emissions, in which the Environmental Protection Agency has limited authority to regulate forest management.[64] While there is precedent for federal regulation of private-forest management, such as through control of nonpoint source pollution under the CWA or through control of real-estate development under the Wild & Scenic Rivers Act including along the Columbia Gorge in Washington and Oregon, there is also historic precedent that private forest and land development are generally regulated by states and counties, rather than the federal government.[65]

However, an interesting buyer preference for carbon-emissions reduction projects secured by conservation easements emerged under the voluntary program which persisted into the pre-compliance program and the regulatory program of California. Projects across the nation that qualify for offset credit under the California program are secured by conservation easements. This appears to be driven by two practical issues, one concerning the sellers, and the other concerning the buyers of CRTs. With the growing regulatory market for

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7, 2011).

59. Personal communication between Laurie Wayburn and C. Best (2010).

60. *Id*.

61. 2006 Cal. Legis. Serv. ch. 488 (West) (codified at CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West Supp. 2010)).

62. *See* CAL. HEALTH & SAFETY CODE § 38501(f)–(h).

63. *Id.* § 38510.

64. John P. Dwyer, *The Practice of Federalism Under the Clean Air Act*, 54 MD. L. REV. 1183 (1995).

65. *See, e.g.*, Marci A. Hamilton, *Federalism and the Public Good: The True Story Behind the Religious Land Use and Institutionalized Persons Act*, 78 IND. L.J. 311 (2003).

CRTs in California and the Regional Greenhouse Gas Initiative (RGGI) states, both direct emitters, whose emissions are limited under the emissions cap, and emissions traders have engaged in increasing market activity.

Landowners recognize that perpetual easements return significant financial benefit, and if the projects require rolling one-hundred-year commitments for successive annual "vintages" or yields of CRTs (which they do under both the Climate Action Reserve voluntary program and the regulatory programs in both California and RGGI),[66] one may as well get paid for that functional equivalent of perpetuity. Additionally, their CRTs command higher prices. Buyers express a preference for these projects because they convey more quality and appeal to consumers. The additional protection and permanence of the easements reduce the risk that there will ever be a default on the projects.[67]

It remains to be seen what action will be taken concerning climate regulation at the federal level in the future, be it via the CAA or by some as yet unknown future legislation. Forests currently reduce U.S. emissions of carbon dioxide by over thirteen percent.[68] Further, they have the capacity to absorb at least twenty-five percent more than they currently do; thus the role of forests in any climate program is essential.[69] That said, the use of easements to permanently protect the forestland base as a critical carbon sink for the nation is likely to remain voluntary. This poses a compelling argument to increase public support for the acquisition of WFCEs to mitigate global warming directly. Any eventual national carbon market could then supplement this protection.

V

DISCUSSION

These are examples of new applications of conservation easements in the regulatory environment, above and beyond their application in achieving a particular landowner or land trust's goals for traditional open-space or habitat protection. In the case of application to the ESA, there seems to be a fairly wide applicability of the tool to complement agency efforts, as long as the land trust involved has the requisite skills and capacities in resource management and stewardship. In the case of achieving climate policy goals, it appears that there is a strong utility—at least in meeting consumer demands and in gaining greater financial return for landowners by augmenting potential carbon revenues and

66. CAL. AIR RES. BD., CALIFORNIA CAP ON GREENHOUSE GAS EMISSIONS AND MARKET-BASED COMPLIANCE MECHANISMS IN ACCORDANCE WITH CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006 (AB 32), at 17 (Nov. 24, 2009) (preliminary draft regulations), *available at* http://www.arb.ca.gov/cc/capandtrade/meetings/121409/pdr.pdf; CLIMATE ACTION RESERVE, FOREST PROJECT PROTOCOL, VERSION 3.2, at 61 (Aug. 31, 2010).

67. Personal communication between Laurie Wayburn and C. Best.

68. U.S. ENVT'L. PROT. AGENCY, 430-R-10-006, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2008, at 7-1 (2010).

69. *See* Rhemtulla, *supra* note 52, at 6085 (finding that sequestration could be as high as twenty-five or fifty percent in parts of Wisconsin).

providing greater overall return at the present pricing for carbon.

What are the limits and potential concerns with expanding these applications of WFCEs? One issue that arises involves private benefits. In explicitly recognizing these hitherto implicit benefits of conservation easements, the appraisal issue is raised: Should the benefits accrued by virtue of the easement be taken into account in the appraisal as values conveyed to the landowner? If the easement can provide greater regulatory certainty for a landowner, this is an avoided cost for the landowner, and greater dependability of income. This represents a value, even if indirect. Should this be appraised? Is it even appraisable?

In the case of application relevant to the ESA, there is no direct financial benefit received by the granting of incidental-take permission based largely upon the terms of the conservation easement. The easement provides compensation to the landowner that is based on the appraised fair market value of the restrictions themselves. In other instances of granting an incidental-take permit with standard restrictions on management, there would be no compensation on an individual basis for the actions concerned. However, under the easement, these restrictions are permanent, causing a clear distinction between the actions under an incidental-take permit versus under an easement. Additionally, under these easements, there is no "return to baseline," as there would be under a typical permit granted under a Safe Harbor Agreement. Further, the easement has broader performance requirements for habitat restoration; again a clear distinction from typical habitat conservation plans or Safe Harbor Agreements.

Does working collaboratively to expand the use of conservation easements that encourage recovery on private lands pose any concerns for the USFWS? Does it pose any concerns if easements are acquired with public funds, especially federal funds? Is the government providing unjust compensation to landowners to simply follow the requirements of the ESA? Although this question was raised on several occasions, the answer is clearly no. Three major distinctions between following the ESA requirements and implementing permanent conservation easements are noted above: (1) the easement must stand on its own merits; (2) the easements must benefit the overall Conservation Values of the property, such as its ecosystem services, and habitat values as well as any individual species; and (3) the easements must address clearly delineated public policy goals, preferably at the local, state and federal level that are pertinent to ensuring broad public value. Equally, the Harbor permit stands on its own by both incorporating easement terms and adding several specific restrictions solely concerning the Northern Spotted Owl.

This application of WFCEs could be broadened to create a template easement restoring and maintaining both habitats for the Northern Spotted Owl and long-term sustainable forestry that can be tailored to a variety of conditions. Additionally, there is a potential application of easements to underpin broader agreements for suites of species that rely on the older, more-

natural forests that these easements foster, rather than their use in a species-by-species approach.

Some parties have questioned the applicability of using WFCEs to underpin the use of forests to reduce carbon emissions. There have been questions of what was gained between the agreement of the WFCE and the agreements required for carbon-emissions reductions or CRTs. On the one hand, landowners receive compensation for the conservation easement based on the foregone harvest and development rights. On the other hand, they receive payments for CRTs based on the carbon embodied in avoided depletion of the forest, increased total volumes of carbon maintained in the forest, and avoided conversion of the forest. If public funding supported the easements, some argue that the public should own the carbon that is stored as a result of the easement requirements. Had easements remained a *requirement* for carbon-emissions reductions, this argument could well have prevailed based on a quid pro quo approach. In other words, the landowner would had been paid twice for the same conservation easement: once to purchase the easement that created these CRTs, and again for the CRTs themselves. This would be a "double-dip."

However, *absent* the requirement for a conservation easement, the landowner is voluntarily electing to undertake an easement, as well as all the other requirements of a carbon-emissions-reductions project. The CRT value has not been appraised and specific actions required to create CRTs are not specified under the easement as a restriction. Further, the easements cover far more than the CRT projects alone, addressing protection of overall conservation values of the property, clearly differentiating the two agreements. Additionally, under normal usages of conservation easements, the public does not own the right to actively use any of the easement rights per se; these rest with the land trust as negative rights. Landowners must also willingly and explicitly assign these rights as restricted or forgone to the land trust in the agreement. Any rights not specifically identified remain with the landowner. Absent such agreement by landowners, which is likely only when direct compensation is involved, the legal basis for asserting ownership by the public is likely tenuous. This, however, remains an area of debate in continued development of carbon-emissions-reduction projects on forests conserved in part or whole with public funding.

In this latter case, the overarching issue of distinct and additive payments for ecosystem services is the underlying question. When an easement is purchased for a piece of forest that has multiple public benefits—water quality and quantity, scenery, habitat, recreation, and the forest itself—the appraisal is based largely on the two main financial values of that easement—timber and development. Over the last decade we have seen a significant rise in the interest of developing additional payments for landowners to provide these other public benefits. It has been argued that each and every benefit should be paid for as if separable and functional from the system itself. WFCEs, which address the overall ecosystem function, benefit from these values but do not pay for them.

Given that easements are paying for negative—rather than affirmative rights—landowners who engage in active management to restore beneficial values have every right to derive financial benefit there from. Further, as easements extend the desired impact of regulations well beyond the limits of command and control regulation, they merit public support to achieve those multiple values. They are also serving as a highly credible, functional, and robust market for ecosystem services on which more can be built.

VI

CONCLUSION

Regulatory responses to harm public-trust resources have focused on halting direct harm to specific resources, rather than addressing the drivers of that harm. In many cases, the drivers of that harm are based in overarching ecosystem impacts of resource management and require solutions that address both the ecosystem itself and the root causes of the management which has caused harm, and not only changes to the management itself. WFCEs provide a complementary tool to regulatory responses to prevent or diminish harm of forest wildlife, habitat, and global climate. As an incentive-based tool, they provide direct financial compensation to compete with the financial rewards of resource depletion. Initial application of WFCEs to supplement regulatory responses to both listed-species protection and climate degradation has proven positive and worthy of expanded use.